Architectural Works

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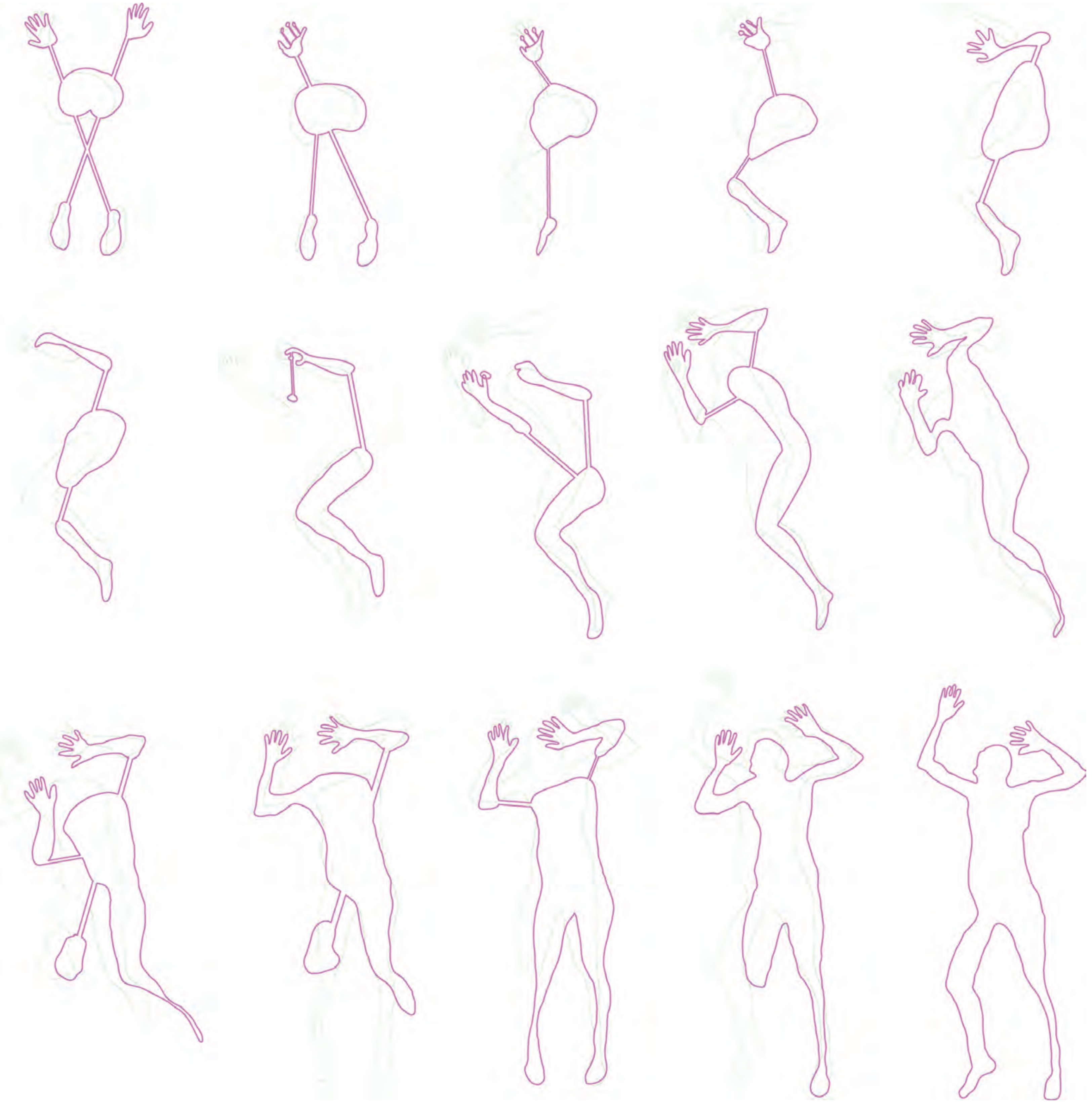

To Whom it May Concern,

I recently graduated from Princeton with a major in architecture and minors in both computer science and sculpture. The materials enclosed represent my experience designing and fabricating architectural works. I was first introduced to the design process at the Student Design Agency where I worked collaboratively to create graphic promotions for groups affiliated with the university. I was constantly impressed by how projects would be transformed through interpretation of critique from the whole agency. Hard work and persistent receptiveness to feedback produced compelling designs.

My first professional experience in architecture came in the summer of 2013 when I worked at a Chinese architecture firm called Global Design Group (上海筑合建筑有限公司). Living with a Chinese host family and working in Chinese gave me a perspective on architectural design backgrounded by contemporary Chinese culture. The importance of this wider context to architectural design was constantly apparent. For instance, through a conversation with the the firm's structural engineer, I learned that it was the low price of labor that encouraged Chinese builders to construct most buildings out of poured concrete instead of the American standard cinderblock.

I am also proficient in a number of different programming environments including Java, C, Python and Javascript. I have experience developing RhinoPython scripts to both analyze models and experiment with form finding algorithms. I also have implemented image processing and rendering algorithms in Javascript and GLSL using the Three.js library.

Working between these diverse areas of interest has encouraged me to approach computer rendering with the knowledge of architectural drafting techniques, and consider parametric design in the larger context of computer simulation. I look forward to working in teams where I often find myself discussing technical possibilities with designers and the merits of coherent design with engineers.

Sincerely,

Nicolas Schmidt

Cover illustration is taken from a study done for the Apostrophe Chair created by tracing someone rolling from sitting to laying.

To Whom it May Concern

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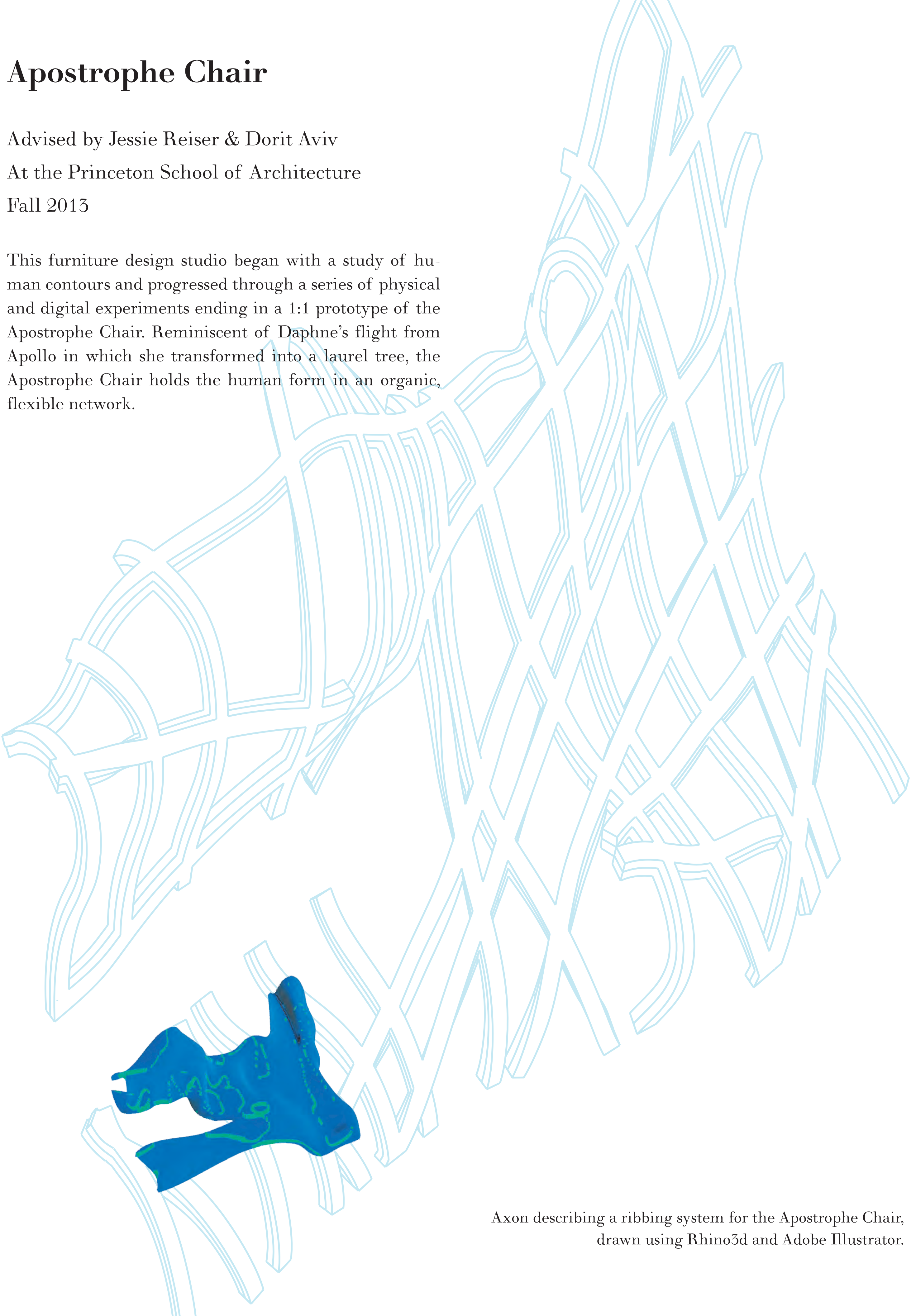
Resume

Guerilla Pods, Fall 2014

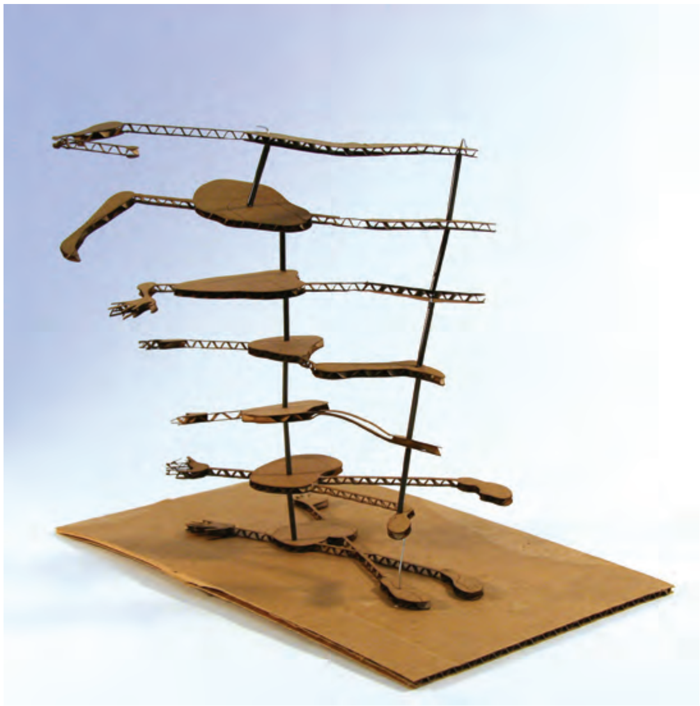
Apostrophe Chair

Advised by Jessie Reiser & Dorit Aviv
At the Princeton School of Architecture
Fall 2013

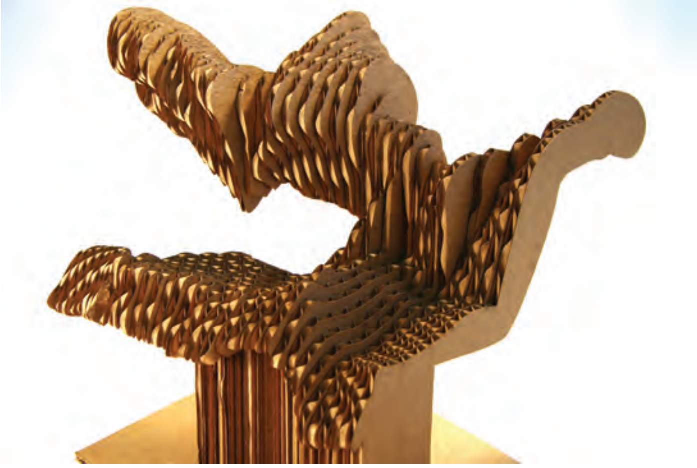
This furniture design studio began with a study of human contours and progressed through a series of physical and digital experiments ending in a 1:1 prototype of the Apostrophe Chair. Reminiscent of Daphne's flight from Apollo in which she transformed into a laurel tree, the Apostrophe Chair holds the human form in an organic, flexible network.

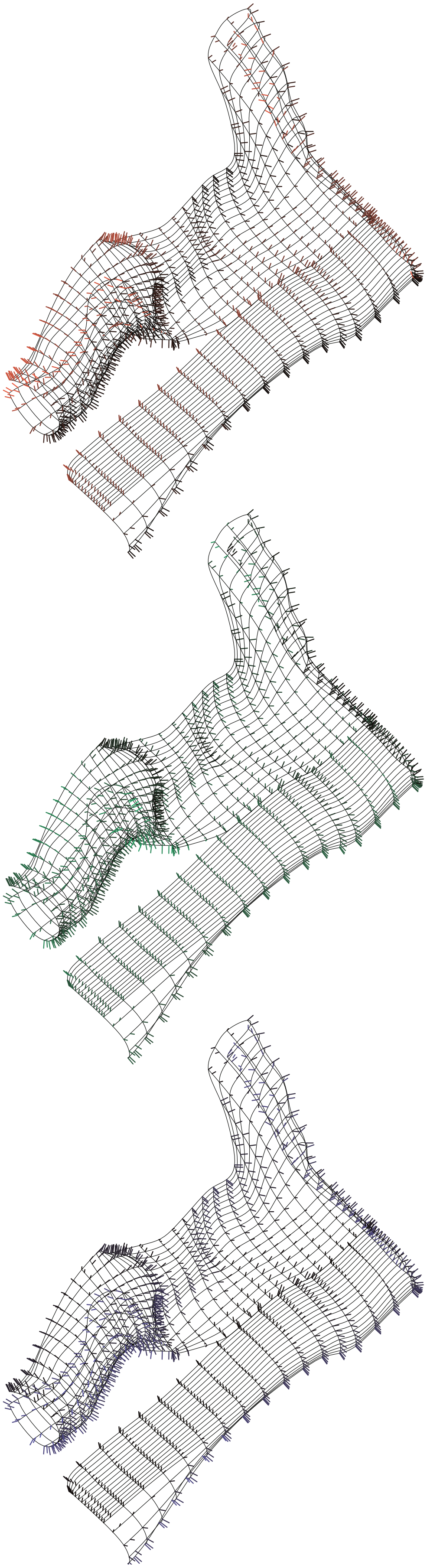


Axon describing a ribbing system for the Apostrophe Chair, drawn using Rhino3d and Adobe Illustrator.

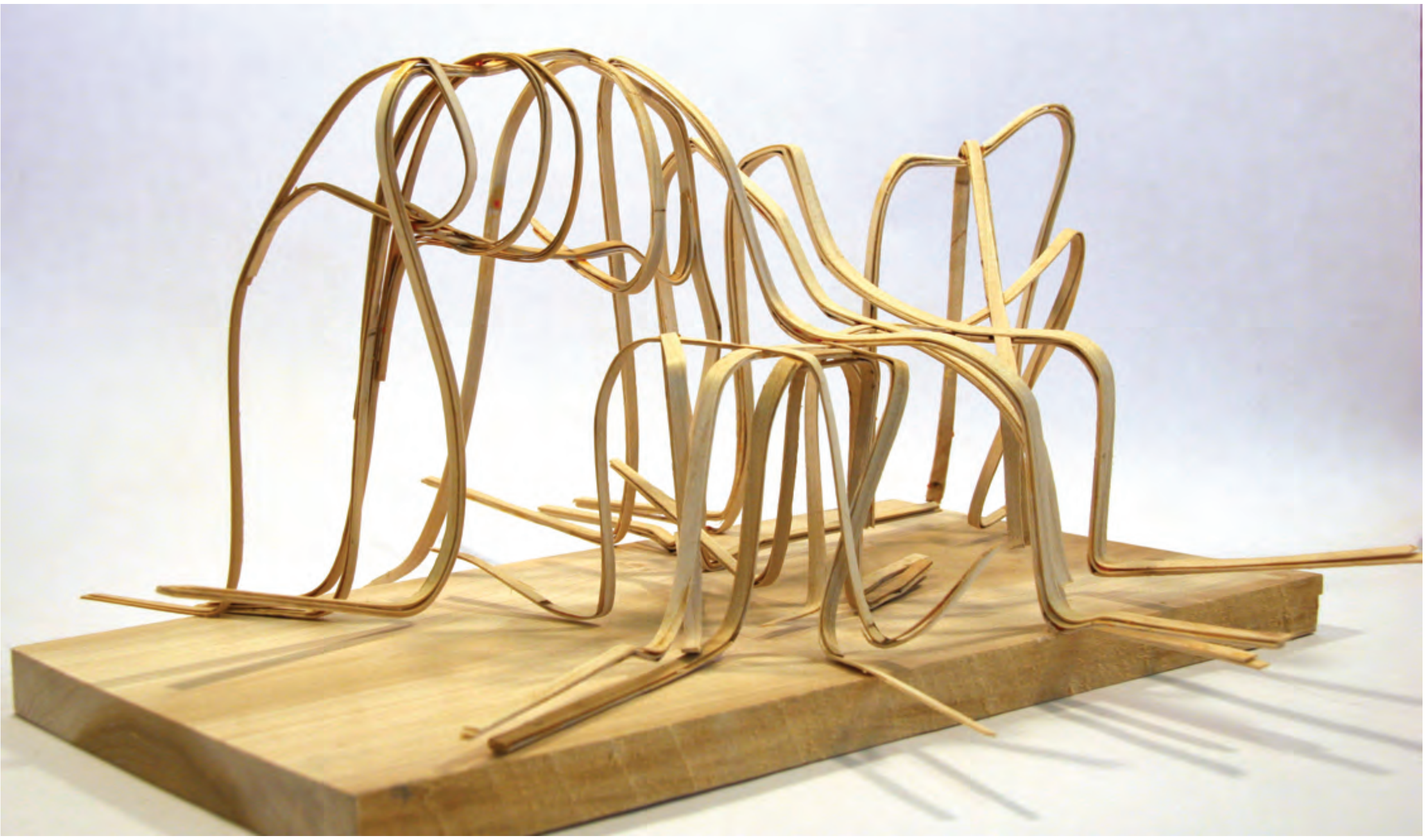


I produced a number of study models and digital experiments to progress from bodily contours to chair surface.





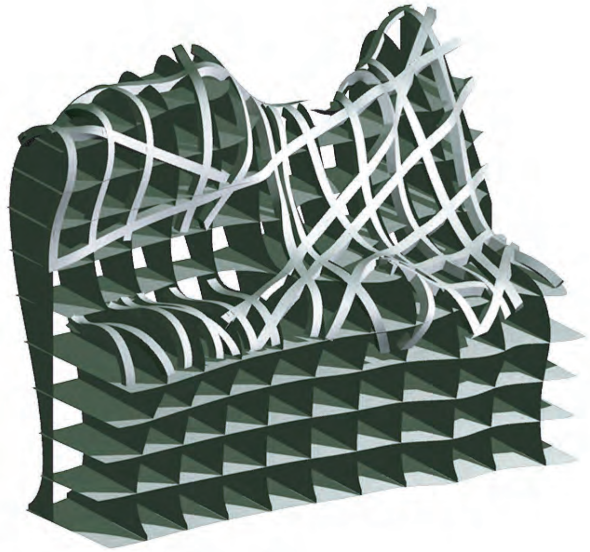
Using a simple RhinoPython script I colored the normals to the surface to identify paths that maintain curvature in only two dimensions.

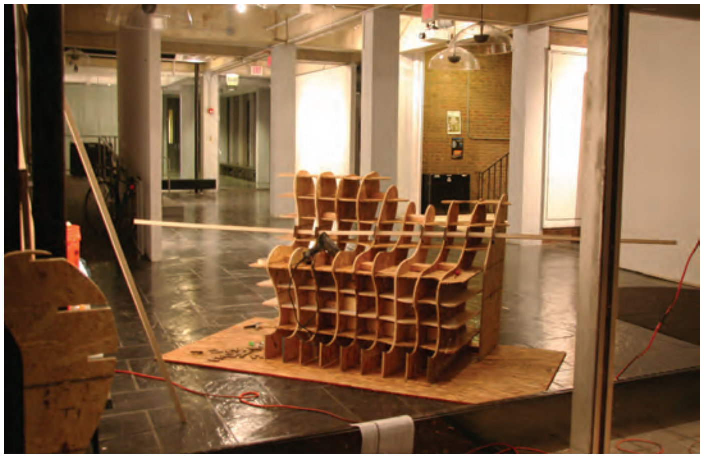


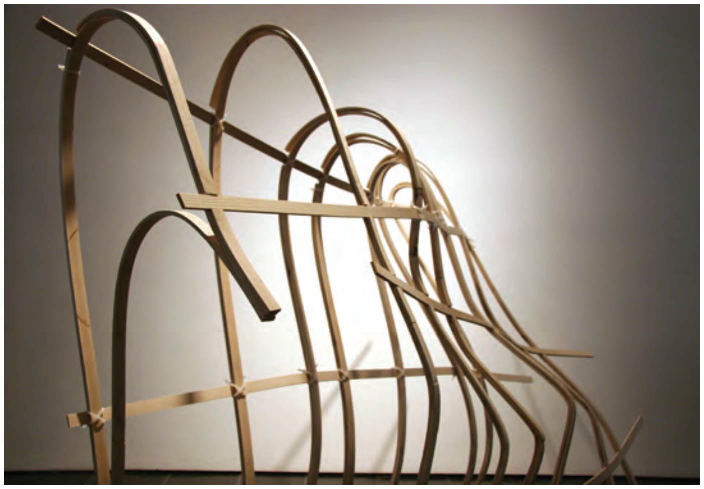
A 1:4 scale model exhibiting the ability to form a chair's surface with steam bent, laminated strips of wood.

I built a structural grid to form the steam bent ribs. The grid approach sacrificed some elegance to provide tolerances in the bending process, which did prove difficult to control at the 1:1 scale.

Ash wood was chosen for its historically tested sensitivity to steam bending. Nevertheless, the ribs rebounded significantly after bending and did not hold their form as robustly as hoped. I added tie backs along the floor plane to hold the ribs' form by maintianing constant pressure. Interestingly this system created a natural spring that absorbed the sitter's weight, a property of this technique that should be capitalized on in future work with ribbed structures.





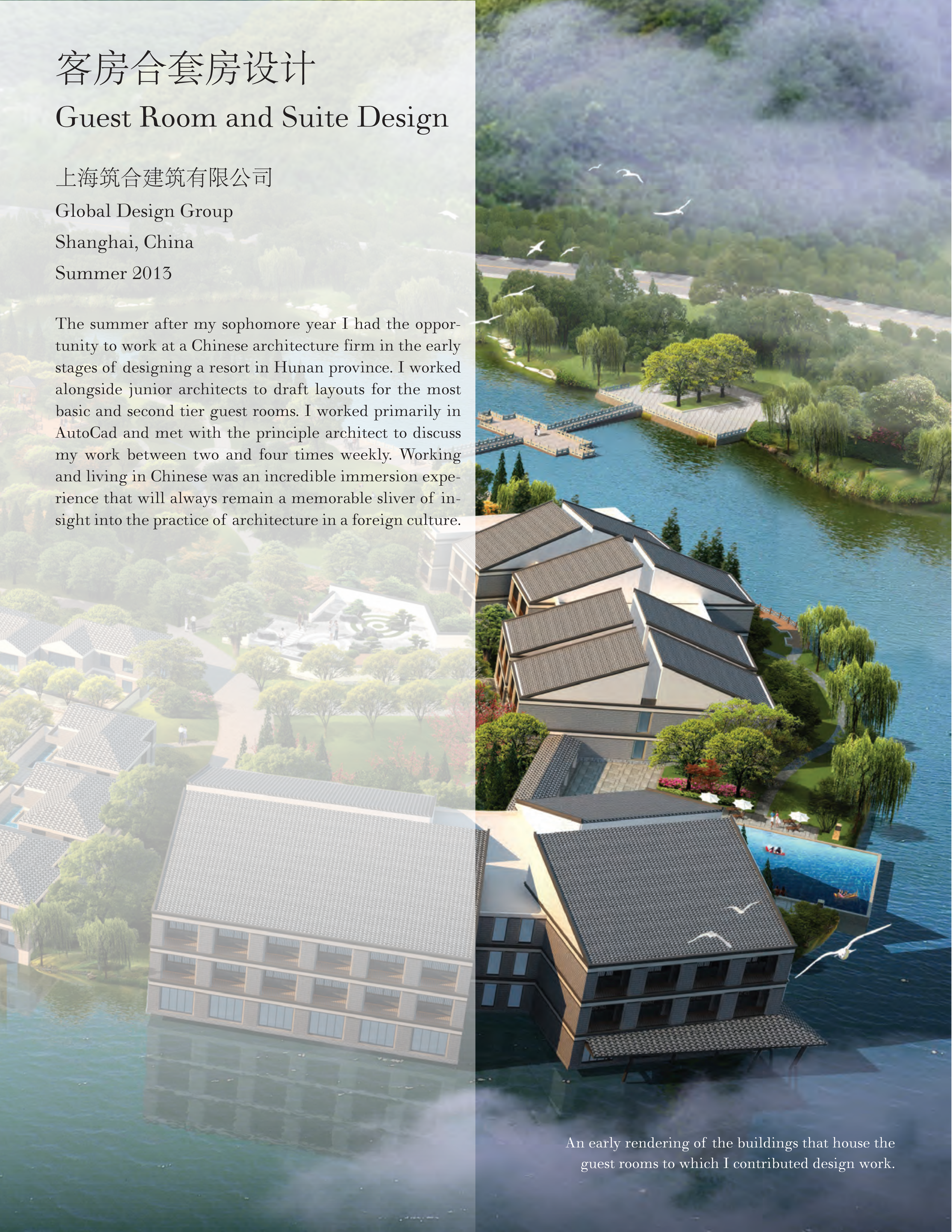


客房合套房设计

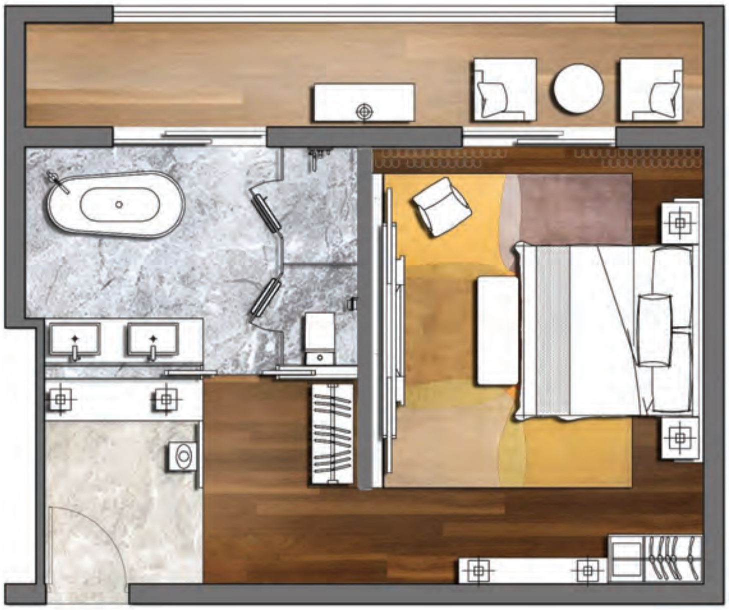
Guest Room and Suite Design

上海筑合建筑有限公司
Global Design Group
Shanghai, China
Summer 2013

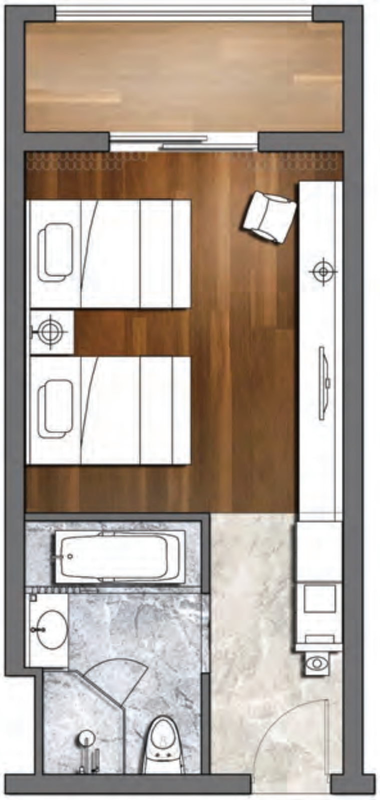
The summer after my sophomore year I had the opportunity to work at a Chinese architecture firm in the early stages of designing a resort in Hunan province. I worked alongside junior architects to draft layouts for the most basic and second tier guest rooms. I worked primarily in AutoCad and met with the principle architect to discuss my work between two and four times weekly. Working and living in Chinese was an incredible immersion experience that will always remain a memorable sliver of insight into the practice of architecture in a foreign culture.



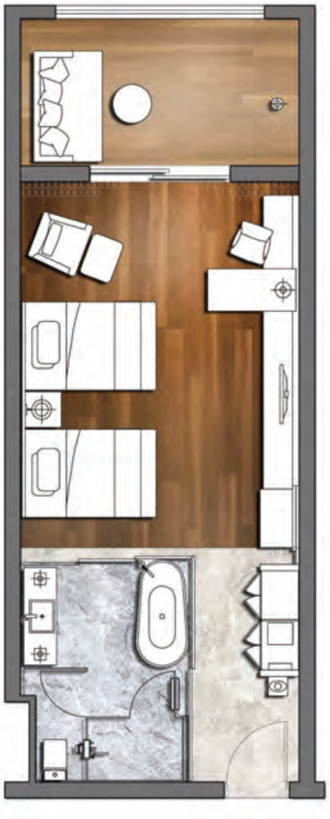
An early rendering of the buildings that house the guest rooms to which I contributed design work.



套房户型平面图
Plan for an apartment style suite



客房户型平面图
Plans for apartment style guest rooms



The main design challenge in laying these guest rooms out was positioning the bathroom so as to maximize usable living space. We tried many arrangements, but ultimately the project became a lesson in why one so often encounters the bathroom first when entering a hotel room. This creates an awkward hallway area, but space and economics dictated a more practical design. This process gave me a whole new appreciation for the series of considerations, necessary for circulation that dictate how our spaces are constructed and arranged.

The Informal Aqueduct

Advised by Mario Gandelsonas & Justin Fowler
At the Princeton School of Architecture
Fall 2013

The Informal Aqueduct is a reintroduction of a pre-drought waterway on the penninsula of Cantinho do Ceu. This waterway will be fed by rainwater diverted from impermeable surfaces, and will be constructed in the ad hoc language of the neighborhood. A "kit of recognizable parts" quality will suggest agency to modify, tap, and contriubte to this communal resource. The Informal Aqueduct is site specific, but not site determined.

Inspired by the work of Roberto Burle Marx, a workshop at the University of Sao Paulo, and the Hidroanel Metropolitan Sao Paulo this studio focused on designing new relationships with water as a resource.

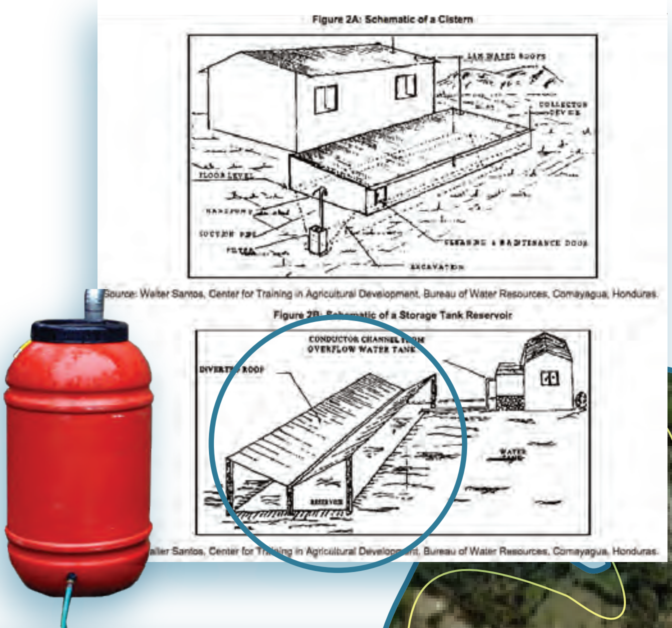
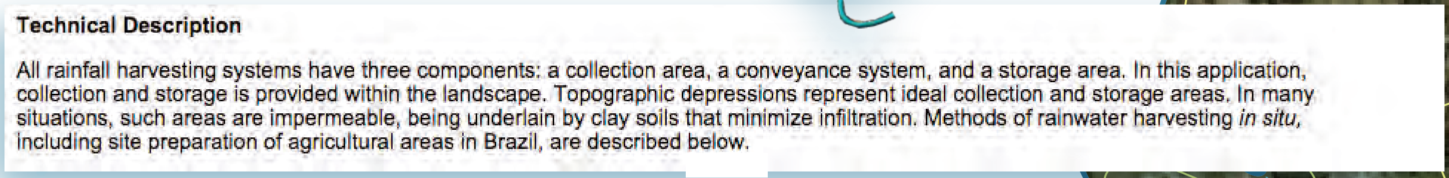


Figure 2A: Schematic of a Cistern

Source: Walter Santos, Center for Training in Agricultural Development, Bureau of Water Resources, Comayagua, Honduras.

Figure 2B: Schematic of a Storage Tank Reservoir

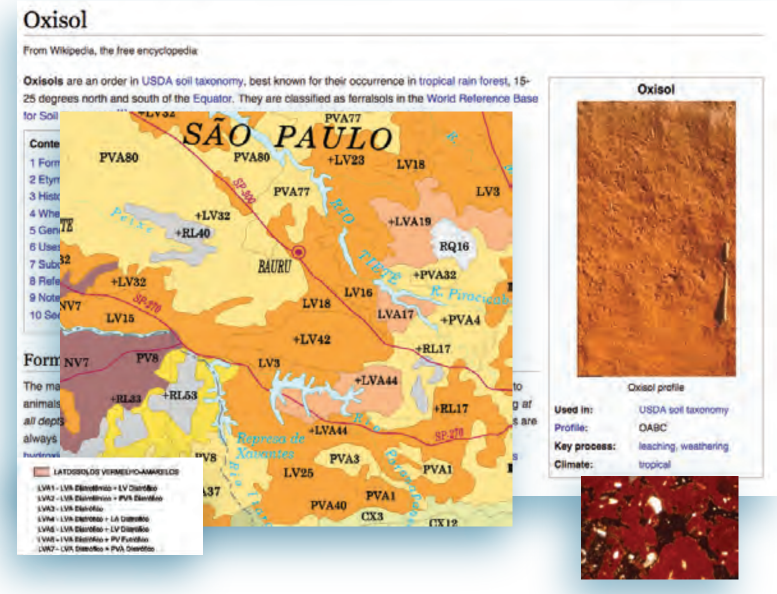
alter Santos, Center for Training in Agricultural Development, Bureau of Water Resources, Comayagua, Honduras.



Technical Description

All rainfall harvesting systems have three components: a collection area, a conveyance system, and a storage area. In this application, collection and storage is provided within the landscape. Topographic depressions represent ideal collection and storage areas. In many situations, such areas are impermeable, being underlain by clay soils that minimize infiltration. Methods of rainwater harvesting *in situ*, including site preparation of agricultural areas in Brazil, are described below.

Research for this project relied heavily on the *Source Book of Alternative Technologies for Freshwater Augementaion in Latin America and the Caribbean*, a publication of the International Environment Technology Center of the United Nations Environment Programme, 1997.



Oxisol

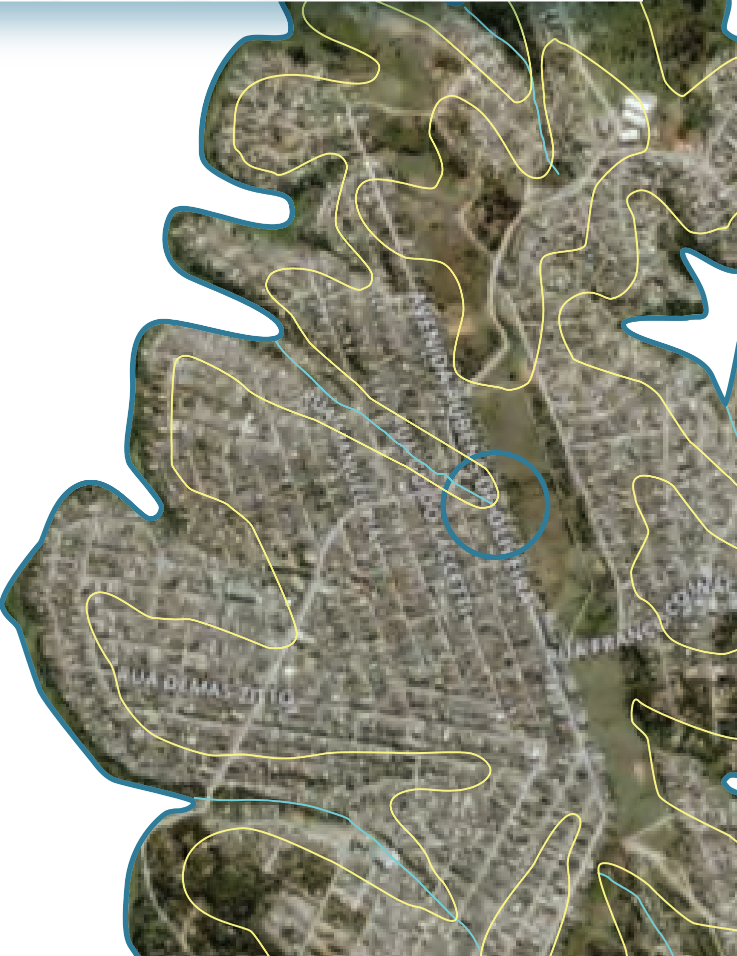
From Wikipedia, the free encyclopedia

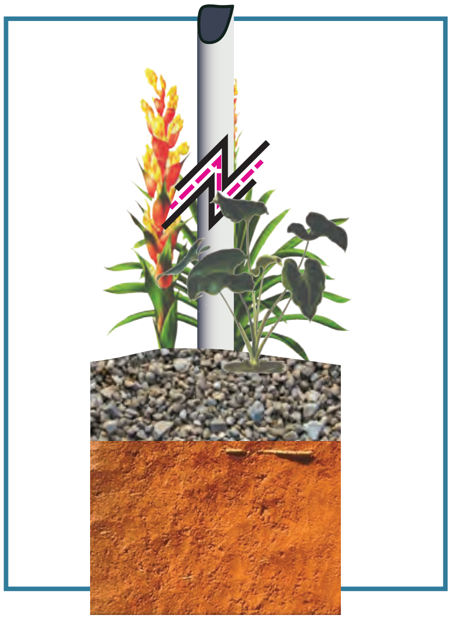
Oxisols are an order in USDA soil taxonomy, best known for their occurrence in tropical rain forest, 15-25 degrees north and south of the Equator. They are classified as ferralsols in the World Reference Base for Soil

Oxisol

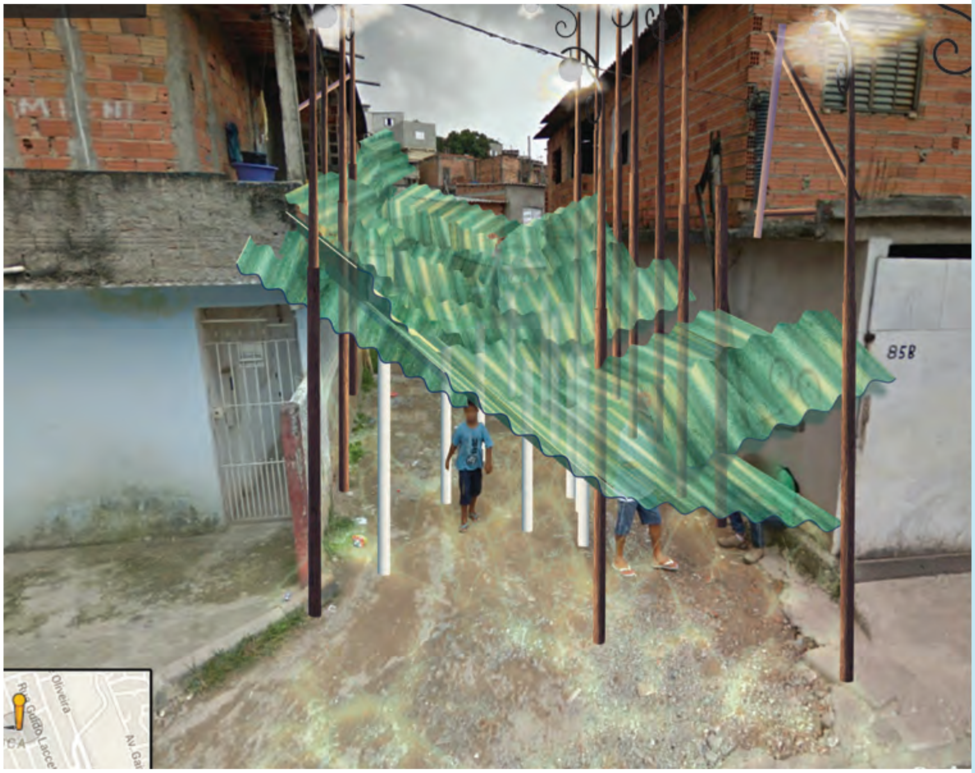
Oxisol profile

Used in:	USDA soil taxonomy
Profile:	OABC
Key process:	leaching, weathering
Climate:	tropical

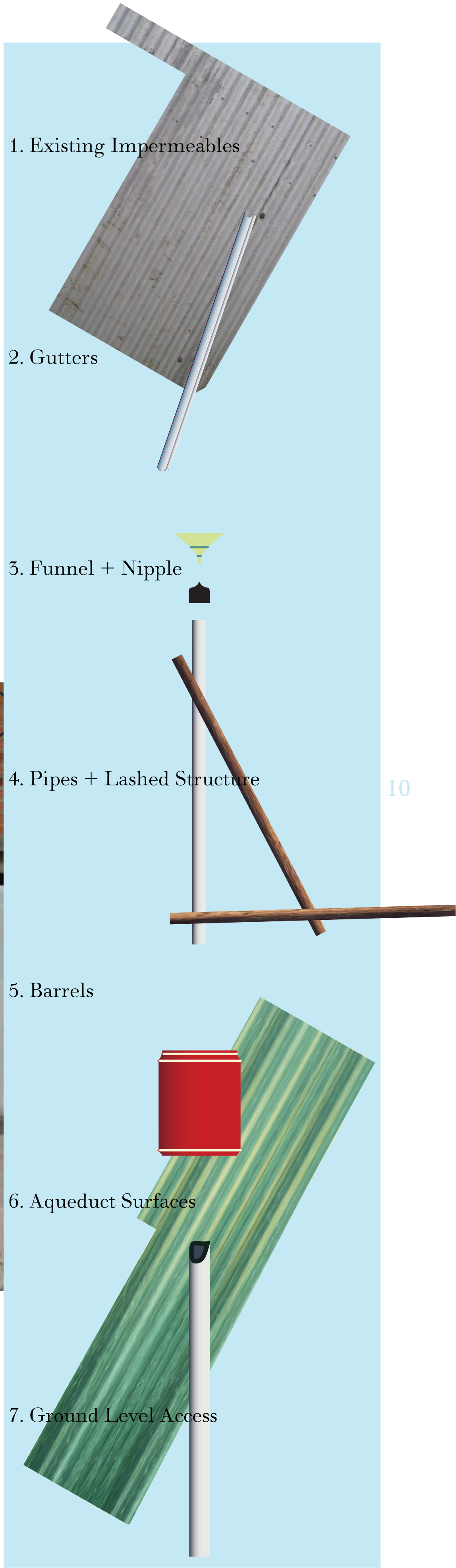




Pipes bring rainwater from the Informal Aqueduct to a porous substrate, and can be tapped by residents



To challenge a pervasive casual attitude to meaningful design challenges I took a research intensive approach that capitalized on previous work on water management and the unique architectural agency present on the penninsula of Cantinho do Ceu.

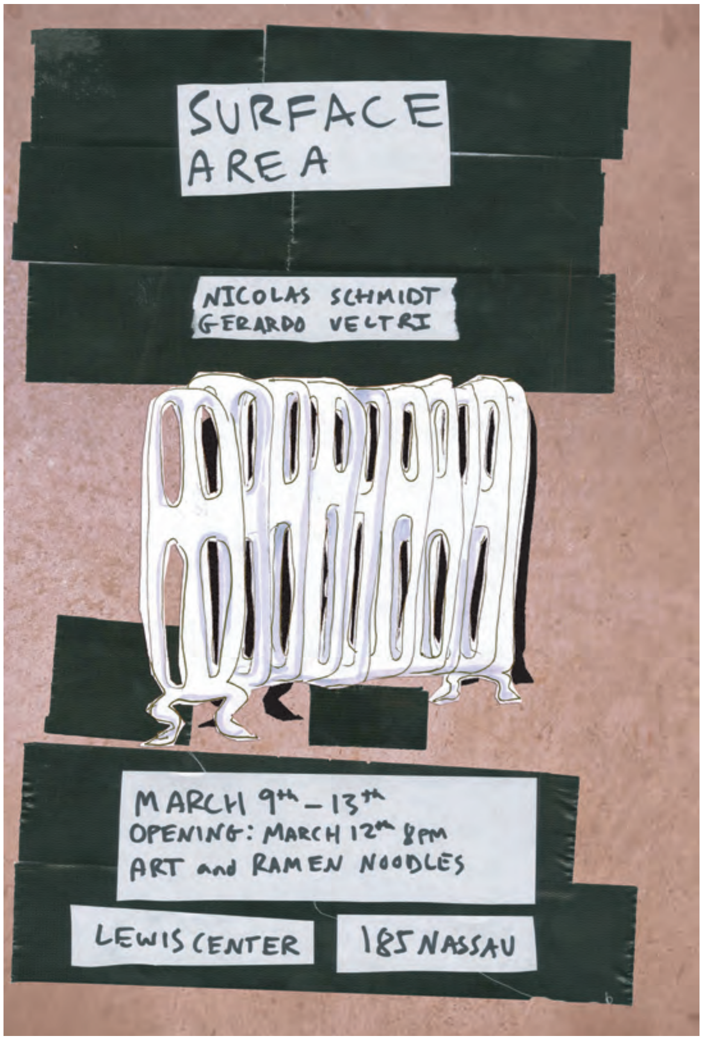


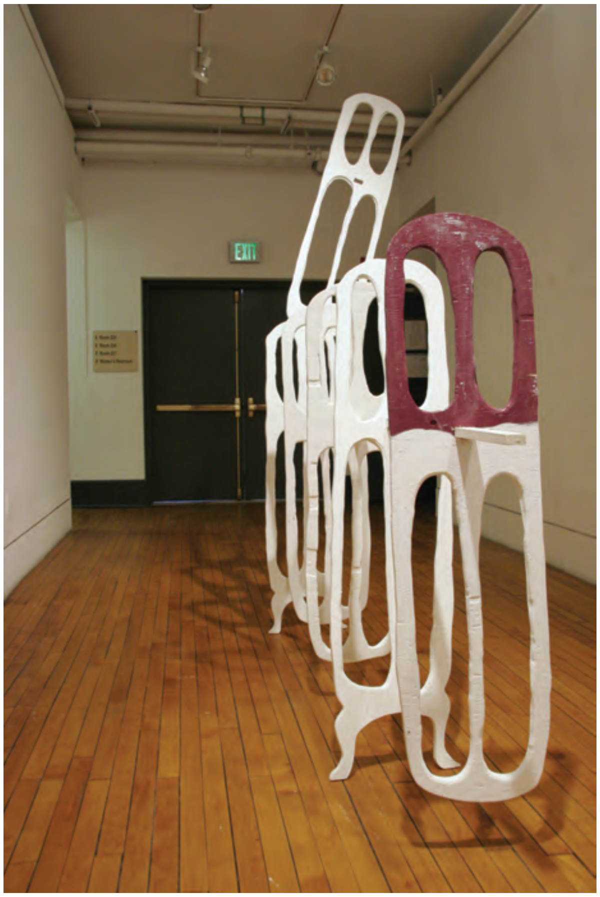
Surface Area

Advised by Martha Freidman & Fia Backstrom
At the Lewis Center for the Arts
Spring 2015

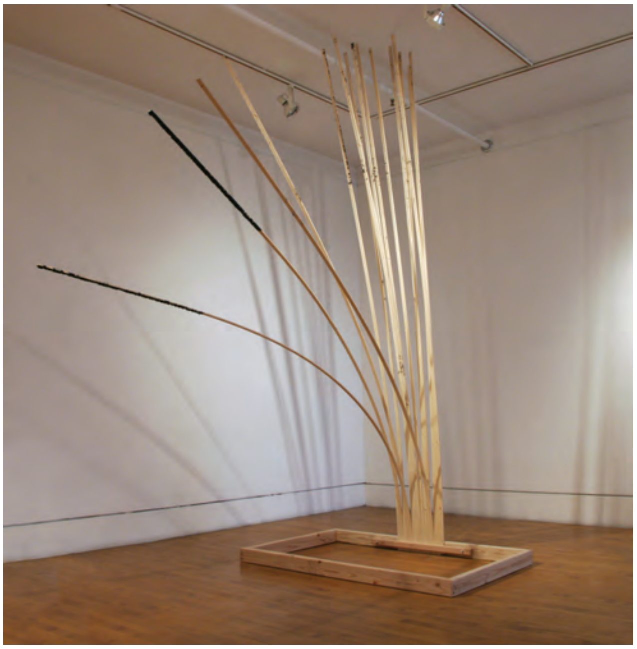
> "The laws of organic man... reside in the invisible function of his inner self: heartbeat, circulation, respiration, the activities of the brain and nervous system. If these are to be the determining factors, then their center is the human being, whose movements and emanations create an imaginary space."
>
> - Oskar Schlemmer

It is no coincidence that our cardio-vascular system and our home heating systems share the same circulatory form. They both are designed to maximize surface area for the purpose of radiating heat most efficiently. Maximizing a system's radiative or absorptive capabilities is an endeavor that recurs in a multitude of biological narratives. These narratives are found at sites of energy transfer from broad leaves that soak up the sun's light to the blades of a fan that create breeze.

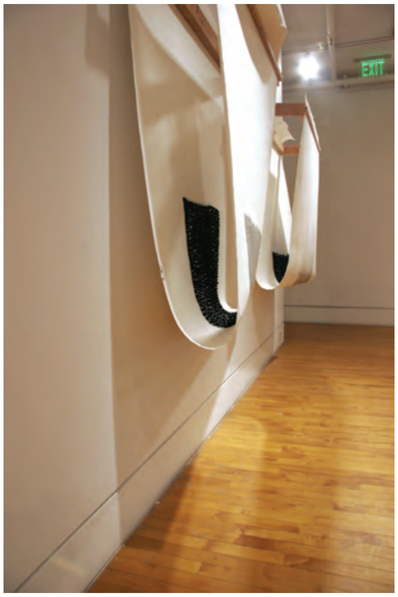




A Waving Radiator.

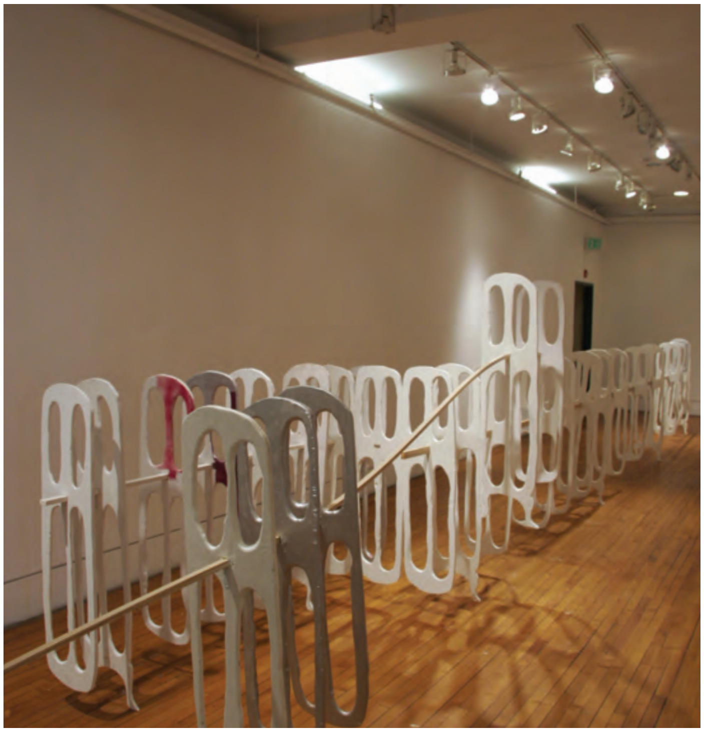


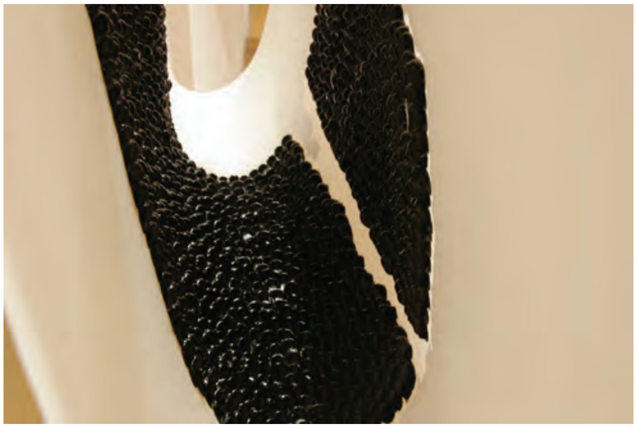
Sticks are drawn down naturally by material weight, like in the radiator variability produces meaning in a population of seemingly similar marks.



The viewer peers into a gentle fold to observe a dark oily population of marks reminiscent of caviar

Like many works in the show, the Radiator is a collection of similar marks that aggregated to form a population. The part to whole relationship is explicitly explored and a unity emerges from an persistant meditation on the theme.





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Education

Princeton University, Princeton NJ, U.S.A. June 2015
A.B. Architecture, Minoring in Visual Arts and Computer Science
Relevant Coursework: Computer Graphics, Architecture and Animation, Architecture 596: Embodied Computation, Advanced Programming Techniques, Chinese Language -403

北京师范大学, Beijing, China June - August 2012
Princeton in Beijing Language Emersion Program
Completed CHI105/106 at Beijing Normal University

Experience

Studio Assistant to Martha Freidman, Brooklyn NY August 2014
Aided in the development of fabrication techniques and construction of a new, large scale sculpture in metal and rubber. Also helped assemble previous works for presentation.

Rosenberg Kolb Architects PC, Princeton NJ January 2014 - September 2015
Advised digital marketing strategies and designed an interactive brochure for a targeted marketing campaign. Used AutoCad to make technical drawings of existing structures for rennovation.

上海筑合建筑有限公司, Shanghai, China June - August 2013
Designed a block of rooms for a resort to be built in Hunan province. Worked with a team to develop a viable design that is cohesive with the larger project. Learned about contemporary Chinese construction practices by talking extensively with the firm's structural engineer.

Student Design Agency, Princeton NJ September 2011 - September 2015
Finance Manager February 2012 - February 2014
Billed clients and payed designers on a biweekly basis. Acted as a liaison between the SDA and Princeton Student Agencies.
Graphic Designer
Designed conceptually strong graphics that professionally represent a client's interests. Clearly communicated design intent with clients and recieved feedback from coworkers

Princeton U. Dining Services, Princeton NJ September 2011 - January 2014
Manager
Managed a group of coworkers to work efficiently as a team.
Captain
Introduced coworkers to a new environment by leading with exemplary work.
Worker
Worked well with managers and captains to provide dining hall services.
Reunions Trucker June 2012, 2013, 2014
Worked 15+ hour days supplying reunions events with food and equipment.

Skills

Proficient in Chinese, Rhino3d, AutoCad, Adobe Illustrator, Adobe Photoshop, C, Bash Scripting, Java, Javascript, Processing, Python, RhinoPython scripting, HTML/CSS, Microsoft Office Applications, Wood working, Model-making

www.input-experience.com | References available.